MIG/MAG WELDING MACHINES

HOMER MG-15

INSTRUCTION MANUAL

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1. INTRODUCTION

Congratulations on your new ALFA IN product. We are proud to have you as our customer and will strive to provide you with the best service and reliability in the industry.

This Operating Manual has been designed to instruct you on the correct use and operation of your ALFA IN product. Your satisfaction with this product and its safe operation is our ultimate concern. Therefore please take the time to read the entire manual, especially the Safety Precautions. They will help you to avoid potential hazards that may exist when working with this product.

Read and understand this entire Manual and your employer’s safety practices before installing, operating, or servicing the equipment. While the information contained in this Manual represents the Manufacturer's best judgement, the Manufacturer assumes no liability for its use.

Welding machine HOMER MG-150 of our private brand HOMER tools is aimed for MIG/MAG welding.

The machine can weld various types of joints (butt, single-sided, double-sided, fillet, lap, etc.) using wire diameter from 0.6 to 0.8 mm, respectively. 1.0 mm (flux cored wire) of different metals and alloys (carbon and alloy steels, aluminium alloys, etc.). HOMER MG-150 is especially designed for bodywork operations or maintenance work. Very good welding can be achieved under a protective atmosphere of CO2. The machine welds very well by means of using high-quality self-shielding wire (no gas cylinder and pressure reducer needed).

2. SAFETY INSTRUCTIONS AND WARNINGS

- OPERATION AND MAINTENANCE OF WELDING EQUIPMENT CAN BE DANGEROUS AND HAZARDOUS TO YOURHEALTH.
- Arc welding produces intense electric and magnetic emissions that may interfere with the proper function of cardiac pacemakers, hearing aids, or other electronic health equipment. Persons who work near arc welding applications should consult their medical health professional and the manufacturer of the health equipment to determine whether a hazard exists.
- Once the packing has been opened, make sure that the machine is not damaged. If in any doubt, call the service centre.
- This equipment must only be used by qualified personnel.
- During installation, any electric work must only be carried out by trained personnel.
- The machine must be used in a dry place with good ventilation.

- Make sure that no metal dust can be drawn in by the fan inside the machine, as this could cause damage to the electronic circuits.
- It is prohibited to connect more than one generator in series or in parallel.
- When installing the machine, follow the local regulations on safety.
- The position of the machine must allow easy access by the operator to the controls and connectors.
- When the welding machine is operating, all its covers and doors must be closed and well fixed.
- Do not expose the welding machine to direct sunlight or to heavy rain. This equipment conforms to protection rating IP23S.
- The operator must wear gloves, clothes, shoes, and a helmet or a welder's helmet, which protect and are fire-resistant in order to protect him against electric shock, flashes and sparks from cutting.
- The operator must protect his eyes with safety visor or mask designed for welding, fitted with standard safety filters. He should also be aware that during arc welding ULTRAVIOLET RADIATION is emitted. Therefore it is vital that his face is also protected from radiation. Ultraviolet rays produce the same harmful effect as sun burning on unprotected skin.
- The operator is obliged to warn anyone near the welding area of the risks that welding involves and to arrange to provide adequate protection equipment.
- Keep all fumes and gases from the breathing area.
- Keep your head out of the fume plume.
- Use an air-supplied respirator if ventilation is not adequate to remove all fumes and gases.
- The kinds of fumes and gases from the plasma arc depend on the kind of metal being used, coatings on the metal, and the different processes. You must be very careful when welding any metals which may contain one or more of the following:

Antimony	Chromium	Mercury
Nickel	Cobalt	Arsenic
Barium	Copper	Selenium
Beryllium	Lead	Silver
Cadmium	Manganese	Vanadium

- Always read the Material Safety Data Sheets (MSDS) that should be supplied with the material you are using. These MSDSs will give you the information regarding the kind and amount of fumes and gases that may be dangerous to your health.
- It is very important to arrange for sufficient ventilation, especially when welding in enclosed spaces. We suggest using suitable fume extractors to prevent the risk of intoxication by fumes or gas generated by the welding process.
- Noise can cause permanent hearing loss. Welding arc processes can

cause noise levels to exceed safe limits. You must protect your ears from loud noise to prevent permanent loss of hearing.

- To protect your hearing from loud noise, wear protective ear plugs and/or ear muffs. Protect others in the workplace.
- Noise levels should be measured to be sure the decibels (sound) do not exceed safe levels.
- The operator must ensure all flammable materials are removed from the work area to avoid any risk of fire.
- The operator must NEVER weld containers that have previously contained petrol, lubricants, gas or similar flammable materials, even if the container has been empty for a considerable time. THERE IS A VERY HIGH RISK OF EXPLOSION.
- The operator must be aware of all the special regulations which he needs to conform to when cutting in enclosed spaces with a high risk of explosion.
- To prevent electric shock, we strongly suggest the following rules:
  - Do not work in a damp or humid environment.
  - Do not use the machine if its cables are damaged in any way.
  - Make sure that the earthing system of the electric equipment is correctly connected and operational.
  - The operator must be insulated from the metal components connected to the return wire.
  - The earthing of the piece being worked could increase the risk of injury to the operator.
- EN 60974-1 Standard: Open-circuit voltage. During the operation of the machine, the highest voltage, with which it is possible to come into contact, is the open-circuit voltage between the clamps.
- The maximum open-circuit voltage of the plasma machines is established by national and international standards (EN 60974-1) depending on the type of current to be used, on its waveform and on the hazards arising from the work place. These values are not applicable to the strike currents and those for stabilisation of the arc that could be above it.
- The open-circuit voltage, for as many adjustments as possible, must never exceed the values relating to the various cases shown in the following table:

Case	Working conditions	Open-circuit voltage	
1	Places with increased risk of electric shock	DC current: 113V peak value	AC current: 68V peak value and 48V effective
2	Places without increased risk of electric shock	DC current: 113V peak value	AC current: 113V peak value and 80V effective
3	Torches held	DC current: 141V	AC current: 141V

	mechanically with increased protection for the operator	peak value	peak value and 100V effective
4	Plasma cutting	DC current: 500V peak value	

- In case 1, the dc machines with rectifier must be built in such a way that, in case of a fault developing in the rectifier (for example open circuit, short circuit or lack of power), the permitted values cannot be exceeded.

  The welding machines of this type can be marked with the symbol: S
- Before opening the machine switch off the machine and disconnect it from the power socket.
- Only personnel authorised by this company can carry out maintenance on the machine.

2.1 ELECTROMAGNETIC COMPATIBILITY (EMC)

This machine conforms to EN 60974-10 standard. However, the electromagnetic emissions generated could prove not be compatible with the maximum permitted levels for some classes of electrical equipment, such as the following:

- Domestic electronic appliances (radios, TVs, videos, telephones, burglar alarms, etc.).
- Computers, robots, electro-medical instruments and life-support systems.
- Radio-television transmitters and receivers.
- Pacemakers and hearing aids.
- All very sensitive electrical equipment.

The operator is responsible for the installation and use of the cutting machine. If there should be any fault in operations of other systems located in the immediate vicinity of the generator, we recommend suspending operations and consulting the manufacturers.

2.2 PROTECTIVE UTTILITIES

- Welding helmet with filter shade at least 10
- Welding gloves
- Welding apron and cloth
- Welding boots

2.3 RISK OVERVIEW

- Risk of electric shock.
- Ultraviolet light and light radiation
- Risk of inhaling gas fumes and dust particles

- Burns
- Noise

NOTE

- It is forbidden to operate a machine with damaged insulation of the welding torch or supply cable.
- Never operate the machine taken down or damaged covers.
- It is forbidden to operate the machine in wet environments and outdoors in rain or snow.
- Ensure proper grounding clamping pliers, which also reduces the risk of electric shock.
- Use prescribed protective utilities, keep them dry.
- Arc welding produces intense electric and magnetic emissions that may interfere with the proper function of cardiac pacemakers, hearing aids, or other electronic health equipment. Persons who work near plasma arc cutting applications should consult their medical health professional and the manufacturer of the health equipment to determine whether a hazard exists.
- Never aim the torch against the eyes, body or other person.

3. CONDITIONS OF USE

- This equipment must only be used by qualified personnel.
- During installation, any electric work must only be carried out by trained personnel.
- Do not expose the plasma machine to direct sunlight or to rain or snow. This equipment conforms to protection rating IP23S.
- Place the machine the way that the cooling air can enter the vents without restriction to. It is necessary to ensure that no impurities, especially metal particles are not drawn into the machine.
- Welding machine in terms of interference suppression is intended primarily for industrial premises. In the case of use of other areas may be need for special measures (see EN 60974-10).
- The machine must be protected against

a) moisture and rain and snow
b) mechanical damage
c) draft and any ventilation of neighbouring machine
d) excessive overloading - crossing technical parameters
e) rough handling

4. TECHNICAL DATA

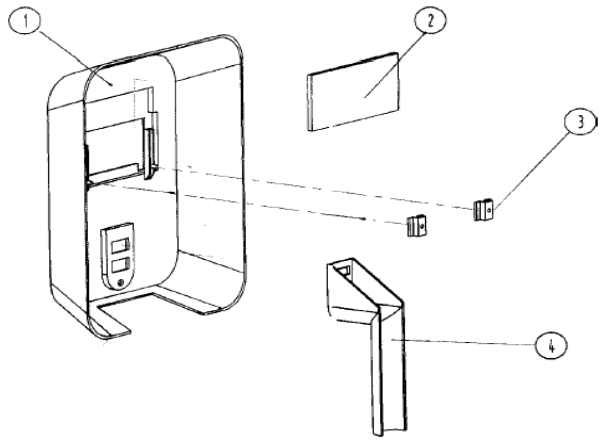
		ALF 181

Mains voltage	V/Hz	1 x 230/50
Mains protection	A	16 slow
Max. input power I1	A	24,2
Max. effective current I1eff	A	7,7
Welding current range	A/V	40/16,0 - 140/21,0
Open-circuit voltage U20	V	32,3 - 53,3
Welding current (DC=100%) I2 /U2	A/V	50/16,5
Welding current (DC=60%) I2 /U2	A/V	60/17,0
Welding current (DC=x%) I2 /U2	A/V	10% = 140/21,0
Voltage steps		4
Insulation class		F
Protection		IP 21 S
Standards		EN 60974-1
Dimensions (w x l x h)	mm	260 x 450 x 390
Weight	kg	27,0
Wire speed	m/min	1,5 - 17,5
Spool diameter	mm	200
Spool weight	kg	5

5. ACCESSORIES

5.1 DELIVERED WITH THE MACHINE

- Welding torch
- Ground cable
- Brush
- Feeding roll 0,6 – 0,8 mm
- Welding shield



5.2 ACCESSORIES TO ORDER

- Wire cleaner

- CO2 Gas pre heating cable
- Reduction valve KU 5, K 2
- Gay cylinder
- Torch consumables
- Feed rolls 0,6-0,8 mm, for carbon steels, aluminium, flux core wires
- Welding helmets S777s– Variours designes

- Welders Cart HOMER tools (Ordering No 5.0228)

6. DESCRIPTION OF THE APPLIANCE

6.1 MAIN PARTS

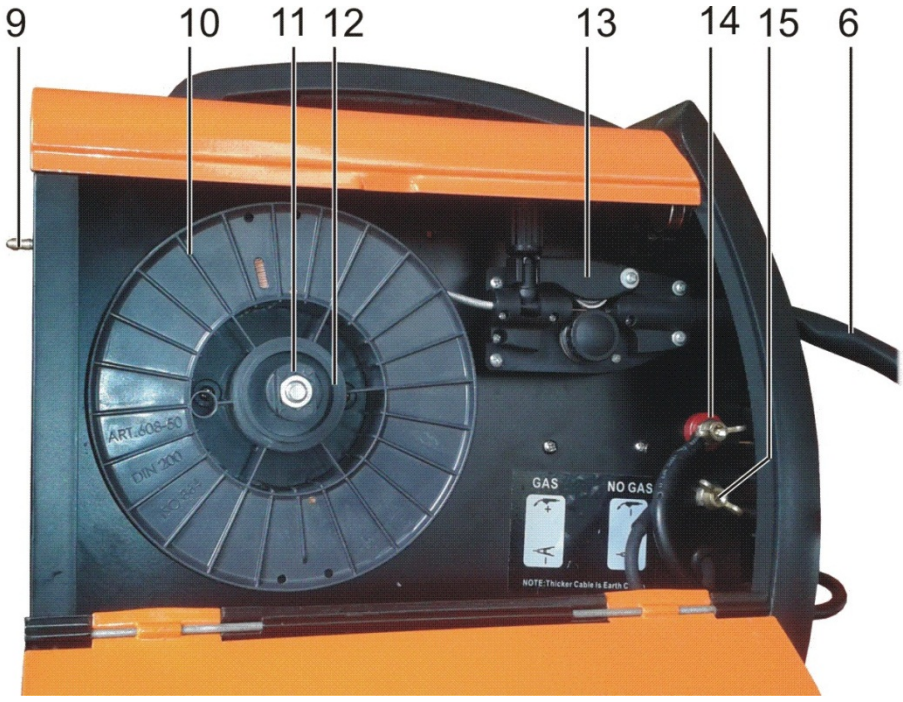


Fig. 1 - Main parts

1	Wire speed potentiometer
2	Voltage switch MIN/MAX
3	Voltage switch 1/2 LED over heating indicator
4	ON / OFF Switch
5	LED Over heating Indicator
6	Welding torch
7	Ground cable
8	Mains cable
9	Gas connector
10	Fitted on welding wire spool (not part of delivery)
11	Spool Holder
12	Inlet
13	Wire Feeder
14	Plus terminal (red)
15	Minus terminal (black)

6.2 WIRE FEEDER

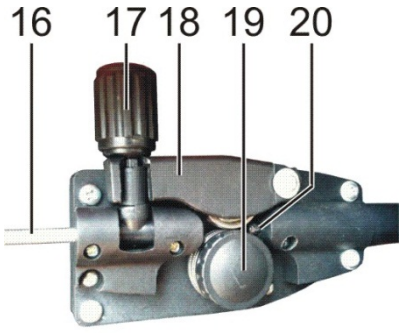


Fig 2 – Wire feeder

Pos.	Description
16	Feeder inlet liner
17	Fixing shaft
18	Pressure arm
19	Roll, Plastic cup
20	Torch inlet liner

7. GETTING STARTED

Homer MG-150 is equipped with a roller with two grooves - 0.6 and 0.8 mm. These grooves are intended for steel or aluminium solid wires of corresponding diameter. For the flux cored self-protective wire diameter of 0.8 mm, 0.9 mm or 1.0 mm is used the groove of 0.8 mm. For all types of wires is used the roller with knurled groove (supplied).

1. Connect the earthing clamp **7** to the welding piece
2. Plug the mains plug to 230 V mains.

3. Switch the machine on by the ON/OFF switch **4**.

7.1 INSERTING THE WIRE

1. Open the side cover of the wire feeder space.
2. Put the wire spool **10** on the wire spool holder **11.**
3. Put the Inlet **12** onto the holder **11** followed by the spring and tighten up the nut onto the holder **11**.
4. Cut off the curved or damaged end of welding wire and lead it through the Feeder inlet liner **16,** and the roll **19** into the Torch inlet liner **20** (about 5 cm). Make sure, that you use the suitable groove of the roll.
5. Make sure that the wire fits into the Torch inlet liner **20**!
6. Put the pressure arm **18** down and fix it by setting the Fixing shaft **17** into vertical position.
7. Adjust the pressure of the Fixing shaft **17** that way that it provides constant movement of wire but it does not deform wire.

7.2 INSERTING THE WELDING WIRE INTO THE WELDING TORCH

1. Take off the torch gas cup
2. Take off the torch tip
3. Press the torch trigger, the wire will start feeding into the torch
4. When the wire reaches the end of the torch, release the trigger, screw on the tip and the nozzle.

7.3 CHANGING THE WIRE FEEDER ROLL

Every wire feeding roll in ALFA IN machines can be used for two different diameters of welding wire – the rolls have two grooves.

1. Open the wire feeder by means of the Fixing shaft **17**
2. Unscrew the plastic fixing cup **19** and take off the roll **19**
3. In case there is suitable groove on the roll, turn it around and fix it back to the feeder.

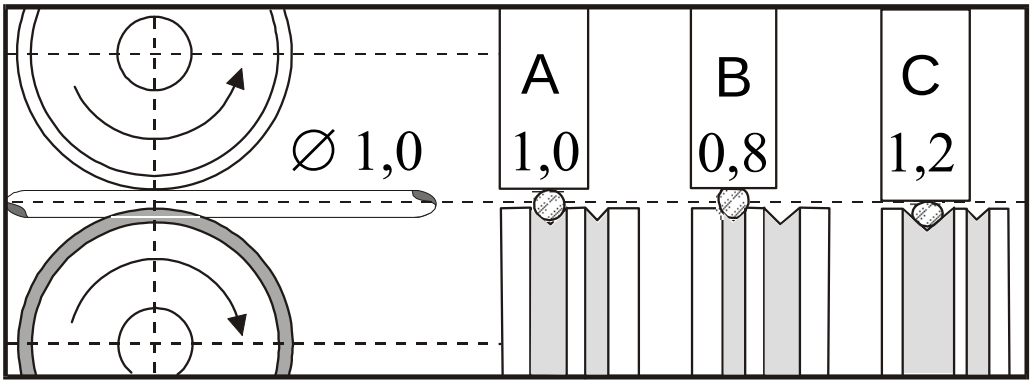


Fig. 3- The influence of the roll groove on the wire (for this machine groves 0,6 and 0,8)

A	Correct
B	Wrong
C	Wrong

7.4 GAS FLOW SETTING

The electric arc and the weld must be perfectly shielded by gas. Too small amount of gas does not perform the protective atmosphere and on the other hand to big amount of the gas brings air into the electric arc.

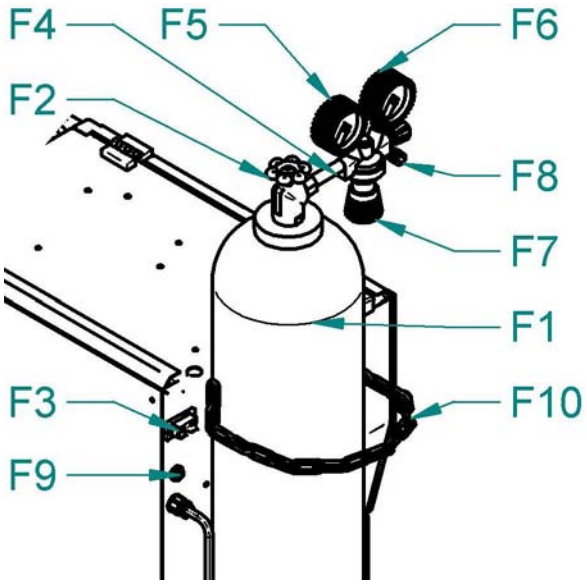


Fig. 4 – Gas fitting

F1	Gas Cylinder
F2	Cylinder Valve
F3	Gas heater connector
F4	Pressure Reducer
F5	High Pressure Manometer
F6	Low Pressure Manometer
F7	Adjusting Screw
F8	Gas outlet
F9	Solenoid Valve
F10	Chain

The gas cylinder cannot be fixed to the HOMER MG-150. It can be fixed onto the welders cart or other fixing appliance according to the user´s manual of such appliance and in accordance with the safety rules.

1. Connect the pressure reduction valve on the gas cylinder.
2. Connect the gas hose to gas outlet **F8** on the valve and the gas inlet **9** on the rear panel of the machine
3. Open the **F2** cylinder valve

4. Press the torch trigger
5. Adjust the amount of gas on the reduction gas valve (it is not a part of the welding machine) by the **F7** adjusting screw
6. Release the torch trigger

8. WELDING

8.1 SETTING WELDING CURRENT AND VOLTAGE

When the wire had been installed and gas had been set it is possible to start welding.

1. The appliance must be plugged into the mains, the ON/OFF switch **4** on "I".
2. To select the voltage use step switch **2** and **3.**
3. To select the current (that is linked to the wire speed) use the potentiometer **1.**

Positions of the switch	Duty cycle	Welding current
MAX-2	10%	120 A
MAX-1		95 A
MIN-2	60%	51 A
MIN-1		35 A

Duty cycle mean percentage of time cycle of 10 minutes , after which the machine can withstand weld at a given current, without switching off by means of the thermal protection .

For orientating adjusting of the welding current and voltage you can use empirical relation U2 = 14+0,05 2. From that you can specify desired voltage.

According to this relation, one can determine the required voltage. When setting the voltage has to considered the decline in load welding. The voltage drop is approximately 4.5-5.0 V at 100 A.

Setting the welding current is performed so that the selected welding voltage settles the desired welding current by increasing or decreasing wire feed speed until the optimum welding arc is reached .

Please note that the actual settings for optimum arc may vary slightly depending on the position of the weld material and voltage fluctuations.

To achieve a good quality of the welds and the optimum setting of the welding current is necessary that the distance of the welding tip from the material is about 10 times the diameter of the welding wire (Fig. 5)

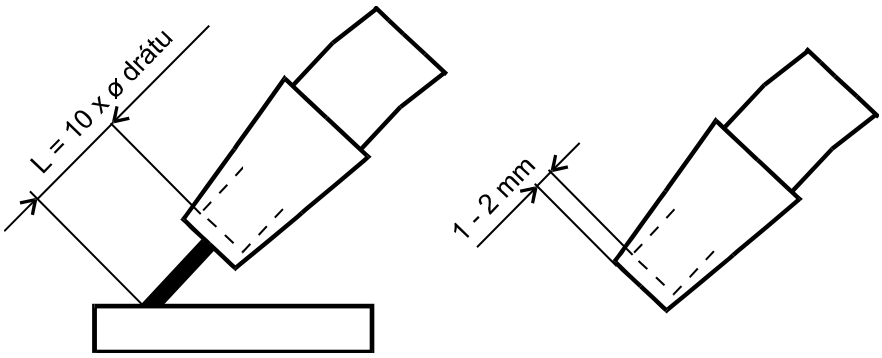


Fig. 5 – distance of the welding tip from the material

9. ROUTINE MAINTENANCE & INSPECTION

The only routine maintenance required for the ALF range of machines is a thorough cleaning and inspection, with the frequency depending on the usage and the operating environment.

WARNING

Disconnect the appliance from the mains supply voltage before disassembling.

Special maintenance is not necessary for the control unit parts in the Welder. If these parts are damaged for any reason, replacement is recommended.

CAUTION

1. Do not blow air into the welder during cleaning. Blowing air into the welder can cause metal particles to interfere with sensitive electronic components and cause damage to the welder.
2. To clean the welder, disconnect it from the mains supply voltage then open the enclosure and use a vacuum cleaner to remove any accumulated dirt and dust. The welder should also be wiped clean. If necessary, solvents that are recommended for cleaning electrical apparatus may be used.
3. Troubleshooting and repairing of HOMER tools welding equipment should only be carried out only by suitably qualified or competent person.
4. A ‘competent person’ must be a person who has acquired through training, qualification or experience, or a combination of them, the knowledge and skills enabling that person to safely carry out a risk assessment and repairs to the electrical equipment in question.
5. The person carrying out the servicing needs and repairs must know what to look at, what to look for and what to do.

10. STATEMENT OF WARRANTY

1. In accordance with the warranty periods stated below, ALFA IN guarantees the proposed product to be free from defects in material or workmanship when operated in accordance with the written instructions as defined in this operating manual.
2. ALFA IN welding products are manufactured for use by commercial and industrial users and trained personnel with experience in the use and maintenance of electrical welding and cutting equipment.
3. ALFA IN will repair or replace, at its discretion, any warranted parts or components that fail due to defects in material or workmanship within the warranty period. The warranty period begins on the date of sale to the end user.
4. If warranty is being sought, please contact your ALFA IN product supplier for the warranty repair procedure.
5. ALFA IN warranty will not apply to:
    - Equipment that has been modified by any other party other than ALFA IN's own service personnel or with prior written consent obtained from ALFA IN Service Department.
    - Equipment that has been used beyond the specifications established in the operating manual.
    - Installation not in accordance with the installation/operating manual.
    - Any product that has been subjected to abuse, misuse, negligence or accident.
    - Failure to clean and maintain (including lack of lubrication, maintenance and protection), the machine as set forth in the operating, installation or service manual.
6. Within this operating manual are details regarding the maintenance necessary to ensure trouble free operation.

NOTE

7. Warranty repairs must be performed by either an ALFA IN Service Centre, an ALFA IN distributor or an Authorised Service Agent approved by the company ALFA IN.

11. DISPOSAL

Only for EU countries. Do not dispose of electric tools together with household waste material.

In accordance with European Council Directive 2002/96/EC on electrical and electronic equipment waste and its implementation in accordance with national law, electric tools that have reached the end of their

service life must be collected separately and returned to an environmentally compatible recycling facility.

12. DECLARATION OF CONFORMITY

ES PROHLÁŠENÍ O SHODĚ
DECLARATION OF CONFORMITY

CE

My, firma
We

ALFA IN a.s.
Nová Ves 74
675 21 Okříšky
IČO: 25535366
OR vedený Krajským soudem v Brně, oddíl B, vložka 2702

prohlašujeme na svou výlučnou odpovědnost, že výrobek
hereby declare under our sole responsibility, that the machine type

HOMER MG-150

je v souladu se směrnicí
is in compliance with the directives

2002/95/EC
2004/108/EC
2006/95/EC

a splňuje požadavky harmonizovaných norem
and that the following standards apply

EN 60974-01
EN 60974-10

V/In Nová Ves
Datum/dated: 3.8.2012

Ing. Vlasta Slámová
místopředsedkyně představenstva ALFA IN a.s.
Vicechairman of the board of directors ALFA IN a.s.

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